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In the Claims:

1. (original) A backbone cyclized peptide analog having IL-6 antagonist activity, comprising a peptide sequence of five to twenty amino acids that incorporates at least one building unit, said building unit containing one nitrogen atom of the peptide backbone connected to a bridging group comprising an amide, thioether, thioester or disulfide, wherein the at least one building unit is connected via the bridging group to form a cyclic structure.

2. (original) The backbone cyclized analog of claim 1 wherein the peptide sequence comprises six to twelve amino acids.

3. (original) The backbone cyclized analog of claim 1 wherein the peptide sequence incorporates at least one D-isomer of an amino acid.

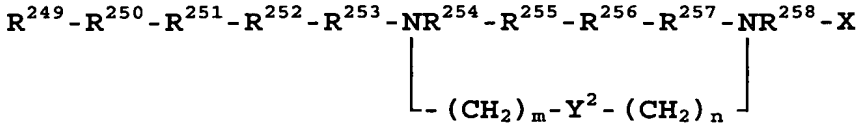
E1

4. (original) The backbone cyclized analog of claim 1 wherein the peptide sequence incorporates at least two D-isomers of an amino acid.

5. (original) The backbone cyclized analog of claim 1 wherein the linear peptide sequence is derived from the IL-6 receptor.

6. (original) The backbone cyclized analog of claim 1 wherein the linear peptide sequence is derived from the IL-6 molecule.

7. (withdrawn) The backbone cyclized analog of claim 1 having the general formula 1:



Formula No. 1

wherein m and n are 1 to 5;

X designates a terminal carboxy acid, amide or alcohol group;

R^{249} is Trp, (L) or (D)Lys, (L) or (D) Tyr or (D)Phe;

R^{250} is Arg;

R^{251} is (L) or (D)Leu or Lys;

R^{252} is (L) or (D)Arg;

R^{253} is (D)- or (L)- Phe;

R^{254} is Ala;

R^{255} is (D)- or (L)- Leu or is Lys;

R^{256} is absent or is (L) or (D) Arg;

R^{257} is (L) or (D) Tyr;

R^{258} is Ala; and

Y^2 is amide, thioether, thioester or disulfide.

8. (withdrawn) The backbone cyclized analog of claim 7 wherein

E/ cont

R^{249} is Trp, (L)- or (D)- Lys or (D)Phe;

R^{250} is Arg;

R^{251} is Lys or (D)Leu;

R^{252} is (D)Arg;

R^{253} is (D)- or (L)- Phe;

R^{254} is Ala;

R^{255} is (D)- or (L)- Leu;

R^{256} is absent or is Arg;

R^{257} is (D)Tyr;

R^{258} is Ala; and

Y^2 is amide, thioether, thioester or disulfide.

9. (withdrawn) The backbone cyclized IL-6 antagonist of claim 8 having the formula:

Trp-Arg-Lys-(D)Arg-Phe-AlaC3-Leu-Arg-(D)Tyr-AlaN3-NH_2

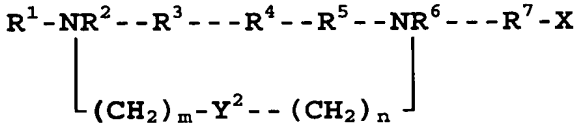
10. (withdrawn) The backbone cyclized IL-6 antagonist of claim 8 having the formula: (D)Lys-Arg-(D)Leu-(D)Arg-(D)Phe-AlaC3-(D)Leu-Arg-(D)Tyr- AlaN3- NH_2

11. (withdrawn) The backbone cyclized IL-6 antagonist of claim 8 having the formula:

(D)Phe-Arg-(D)Leu-(D)Arg-(D)Phe-AlaC3-Leu-(D)Tyr-AlaN3-NH_2

12 to 28. (cancelled)

29. (previously added) The backbone cyclized analog of claim 1 having the general formula:



wherein m and n are 1 to 5;

X designates a terminal carboxy acid, amide or alcohol group;

R1 is (D)Bip, Gln, Lys, Lys(ZCL) Dab or absent;

R2 is (L) or (D)Lys, Gly, Ala, (D)Phe or Trp;

R3 is (D) Cit, Lys, (D)Bip or absent;

R4 is Orn, 4PyrAla, (L) or (D)Dab, (L) or (D)Arg, Lys or Dpr;

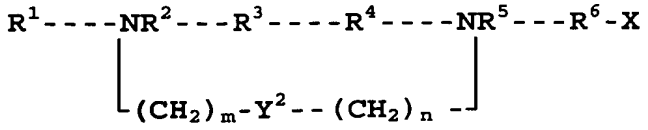
R5 is HomArg, Orn, Lys, Lys(ZCL), Arg, Arg(Mtr) or (D)Glu;

R6 is Asn, (L) or (D)Trp, (D)Gln or (D)Ala;

R7 is Arg, (L) or (D)Trp, (L) or (D)Gln, Abu, Glu or (p-NO2)Phe; and

Y2 is amide, thioether, thioester or disulfide.

30. (previously added) The backbone cyclized analog of claim 29 having the general formula 3:



Formula No. 3

wherein m and n are 1 to 5;

X designates a terminal carboxy acid, amide or alcohol group;

R^1 is (D)Bip, Gln, Lys, Lys(ZCL) or Dab;

R^2 is (D)Lys, Gly, Ala or Trp

R^3 is Orn, 4PyrAla, (L) or (D)Dab, (D)Arg , Lys or Dpr;

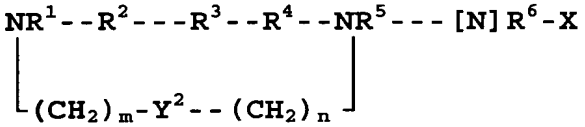
R^4 is Lys, Lys(ZCL), Arg, Arg(Mtr) or (D)Glu;

R^5 is Asn, Trp or (D)Ala;

R^6 is Arg, (p-NO_2)Phe, (L) or (D)Trp, Gln, Abu or Glu; and

Y^2 is amide, thioether, thioester or disulfide.

31. (withdrawn) The backbone cyclized analog of claim 29 having the general formula 4:



Formula No. 4

wherein m and n are 1 to 5;

X designates a terminal carboxy acid, amide or alcohol group;

R^1 is (D)Phe or Lys;

R^2 is (D)Cit, Lys or (D)Bip;

R^3 is Dpr, 4PyrAla or (L) or (D)Arg;

R^4 is HomArg, Orn or Lys;

R^5 is (D)Gln or (L) or (D) Trp;

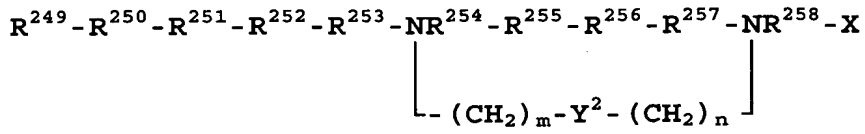
R^6 is (L) or (D)Gln or (p-NO_2)Phe; and

Y^2 is amide, thioether, thioester or disulfide.

32. (Previously added) A pharmaceutical composition comprising a backbone cyclized IL-6 antagonist comprising a peptide sequence of five to twenty amino acids that incorporates at least one building unit, said building unit

containing one nitrogen atom of the peptide backbone connected to a bridging group comprising an amide, thioether, thioester or disulfide, wherein the at least one building unit is connected via the bridging group to form a cyclic structure, together with a pharmaceutically acceptable carrier or diluent.

33. (amended) The pharmaceutical composition of claim 32 ~~14~~ wherein the IL-6 antagonist is a backbone cyclized peptide analog having the general formula 1:



Formula No. 1

wherein m and n are 1 to 5;

X designates a terminal carboxy acid, amide or alcohol group;

R^{249} is Trp, (L) or (D)Lys, (L) or (D)Tyr or (D)Phe;

R^{250} is Arg;

R^{251} is (L) or (D)Leu or Lys;

R^{252} is (L) or (D)Arg;

R^{253} is (D) or (L)Phe;

R^{254} is Ala;

R^{255} is (D) or (L)Leu or is Lys;

R^{256} is absent or is (L) or (D)Arg;

R^{257} is (L) or (D)Tyr;

R^{258} is Ala; and

Y^2 is amide, thioether, thioester or disulfide.

34. (withdrawn) The pharmaceutical composition of claim 33 wherein the IL-6 antagonist is a backbone cyclized peptide analog having the formula:

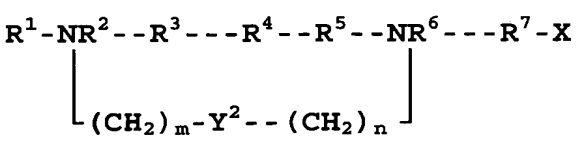
Trp-Arg-Lys-(D)Arg-Phe-AlaC3-Leu-Arg-(D)Tyr-AlaN3-NH_2

35. (withdrawn) The pharmaceutical composition of claim 33 wherein the IL-6 antagonist is a backbone cyclized peptide analog having the formula: (D)Lys-Arg-(D)Leu-(D)Arg-(D)Phe-AlaC3-(D)Leu-Arg-(D)Tyr-AlaN3-NH_2

36. (withdrawn) The pharmaceutical composition of claim 33 wherein the IL-6 antagonist is a backbone cyclized peptide analog having the formula:

(D)Phe-Arg-(D)Leu-(D)Arg-(D)Phe-AlaC3-Leu-(D)Tyr-AlaN3-NH_2

37. (previously added) The pharmaceutical composition of claim 32 wherein the IL-6 antagonist is a backbone cyclized peptide analog having the general formula:



wherein m and n are 1 to 5;

X designates a terminal carboxy acid, amide or alcohol group;

R1 is (D)Bip, Gln, Lys, Lys(ZCL) Dab or absent;

R2 is (L) or (D)Lys, Gly, Ala, (D)Phe or Trp;

R3 is (D) Cit, Lys, (D)Bip or absent;

R4 is Orn, 4PyrAla, (L) or (D)Dab, (L) or (D)Arg, Lys or Dpr;

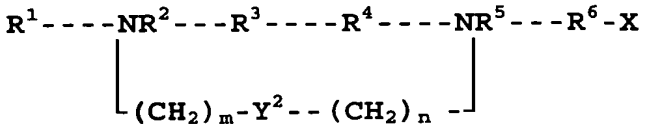
R5 is HomArg, Orn, Lys, Lys(ZCL), Arg, Arg(Mtr) or (D)Glu;

R6 is Asn, (L) or (D)Trp, (D)Gln or (D)Ala;

R7 is Arg, (L) or (D)Trp, (L) or (D)Gln, Abu, Glu or (p-NO2)Phe; and

Y2 is amide, thioether, thioester or disulfide.

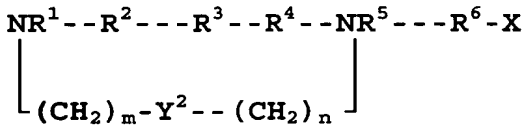
38. (Previously added) The pharmaceutical composition of claim 37 wherein the IL-6 antagonist is a backbone cyclized peptide analog having the general formula 3:



Formula No. 3

wherein m and n are 1 to 5;
X designates a terminal carboxy acid, amide or alcohol group;
R^1 is (D)Bip, Gln, Lys, Lys(ZCL) or Dab;
R^2 is (D)Lys, Gly, Ala or Trp
R^3 is Orn, 4PyrAla, (L) or (D)Dab, (D)Arg , Lys or Dpr;
R^4 is Lys, Lys(ZCL), Arg, Arg(Mtr) or (D)Glu;
R^5 is Asn, Trp or (D)Ala;
R^6 is Arg, (p-NO2)Phe, (L) or (D)Trp, Gln, Abu or Glu; and
Y^2 is amide, thioether, thioester or disulfide.

39. (withdrawn) The pharmaceutical composition of claim 37 wherein the IL-6 antagonist is a backbone cyclized peptide analog having the general formula 4:



Formula No. 4

wherein m and n are 1 to 5;
X designates a terminal carboxy acid, amide or alcohol group;
R^1 is (D)Phe or Lys;
R^2 is (D)Cit, Lys or (D)Bip;
R^3 is Dpr, 4PyrAla or (L) or(D)Arg;
R^4 is HomArg, Orn or Lys;

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R^5 is (D)Gln or (L) or (D)Trp;

R^6 is (L) or (D)Gln or (p-NO_2)Phe; and

Y^2 is amide, thioether, thioester or disulfide.